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FAMILY EPHYDRIDAE

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Abstract

This catalog presents 53 species of Ephydriidae from Colombia that are classified into five subfamilies, 15 tribes and 26 genera. For each species we present the available geographical information.

Key words: catalogue, Colombia, distribution, Ephydriidae

Introduction

Ephydriidae, commonly known as “shore” or “brine flies”, are a diverse and widely distributed family of Schizophora with 1,954 valid species names (Mathis & Zatwarnicki 1995 and unpublished updates). The diversity exhibited includes more than species richness, and many species have adapted to inhospitable environments, such as sulfurous hot springs, highly alkaline or saline lakes and exposed pools of crude petroleum. Larvae are aquatic or semiaquatic and adults are usually found nearby on the surface of mud or water, or on low, emergent vegetation (Wirth 1968; Foote 1995). Larvae of *Hydrellia* Robineau-Desvoidy are miners in the leaves and stems of various plants, such as Alismataceae, Cruciferae, Hydrocharitaceae, Lemnaceae and others. A few species can be serious agricultural pests, especially in cereal crops, such as rice *Oryza sativa* Linnaeus (Poaceae). In Colombia two species of *Hydrellia* are recorded, *H. griseola* (Fallén) and the “South American rice miner”, *H. wirthi* Korytkowski. The first species destroyed approximately 20 per cent of California’s rice crop in 1953, with an estimated loss of US\$ 16,000,000.00, and the second is an invasive species in the United States (Lange *et. al.* 1953; Mathis & Zatwarnicki 1995; Mathis *et al.* 2006; Pantoja & Salazar 1993; Pantoja *et al.* 1993; Rodrigues Júnior *et al.* 2014) and is also a pest in rice.

Adults are small to moderately-sized shore flies, body length 1–11 mm; often usually dull and dark colored, but unusually diverse in body structure, vestiture, and ornamentation, making this family difficult to characterize. Females are often larger than males. Pseudopostocellar setae divergent or lacking. Arista bare, pubescent, or pectinate; aristal hair-like rays on dorsum only (except in *Asmeringa* Becker and in some *Ptilomyia* Coquillett); face bearing setae and/or setulae. Wing with humeral and subcostal breaks; Sc vein rudimentary; vein R₁ merging with C before middle of wing; cells bm and dm not separated by a crossvein; cell cup absent. Anepisternum setulose. No preapical dorsal seta on fore- and hindtibiae Mathis (2010).

Wirth (1968)’s catalog was the first to summarize the Neotropical fauna. Reviews of nearby shore-fly faunas that have contributed to our knowledge are those of Argentina (Lizarralde de Grosso 1989), Belize (Mathis 1997b), and Central America (Mathis 2010). We have adopted Zatwarnicki’s (1992) classification for higher categories.

Although several species are known and recorded from the Neotropical Region, including Colombia, this number is certainly an underestimate, as we have seen in Brazilian reviews of *Diphitia* Cresson (Mathis & Marinoni 2010), *Parydra* Stenhammar (Mathis & Marinoni 2011) or *Hydrellia* Robineau-Desvoidy (Rodrigues Júnior *et al.* 2014), and numerous species await description.

Acronyms used for the depositories

AMNH—American Museum of Natural History, New York, New York, USA.
ANSP—Academy of Natural Sciences of Philadelphia, Pennsylvania, USA.
BMNH—The Natural History Museum (formerly British Museum (Natural History)), London, UK.
CAS—California Academy of Sciences, San Francisco, California, USA.
CNC—Canadian National Collection, Ottawa, Ontario, Canada
CU—Cornell University, Ithaca, New York, United States.
DEI—Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.
HNHM—Hungarian Natural History Museum, Budapest, Hungary.
LACM—Los Angeles County Museum of Natural History, Los Angeles, California, USA.
MACN—Museo Argentina de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina.
MCZ—Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA.
MNHN—Muséum National d'Histoire Naturelle, Paris, France.
NMW—Naturhistorisches Museum Wien, Wien, Austria.
NRS—Naturhistoriska Riksmuseet, Stockholm, Sweden.
SMN—Staatliches Museum für Naturkunde, Rosenstein 1, Stuttgart, Baden-Württemberg D-7000, Germany.
UPRG—Universidad Nacional "Pedro Ruiz Gallo", Lambayeque, Peru.
USNM—National Museum of Natural History, (formerly, United States National Museum), Washington D.C., USA.
ZIL—Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.

List of abbreviations

cat.—catalogue
des.—designation
distr.—geographic distribution
mon.—monotypy
orig. des.—by original designation
pp.—pages
preocc.—preoccupied
refs.—references
rev.—revision
sp., spp.—species
subs.—subsequent
subg.—subgenus
HT—Holotype
LT—Lectotype
NA—Not applicable
NT—Neotype
ST—Syntype
T—Type (unspecified)
F (f#)—Female
M (m#)—Male

Catalogue of Ephydriidae of Colombia

Family **Ephydriidae** Zetterstedt, 1837

Subfamily **Discomyzinae** Acloque, 1897

Tribe **Discomyzini** Acloque, 1987

Genus **Clasiopella** Hendel

Clasiopella Hendel, 1914a: 109. Type species, *Clasiopella uncinata* Hendel, 1914, orig. des. Refs.: Mathis, 1994: 454–465 (rev.).

uncinata Hendel, 1914a: 110. Type locality, Taiwan, Anping. LT F (des. by Mathis, 1994: 460) (DEI). Distr.: Afrotropical: Gambia, Kenya, Madagascar, Senegal, Seychelles (La Digue, Mahé, Praslin). Australasian/Oceanian: Australia (Queensland), Guam, Hawaiian Islands (Hawaii, Midway Island, Molokai, Oahu), Northern Marianas. Nearctic: United States (Florida). Neotropical: Belize, Colombia, Galápagos Islands, Mexico (Tabasco), Tobago, West Indies (Dominica, Grand Cayman, Jamaica). Oriental: Philippines, Taiwan. Refs.: Mathis, 1994: 457–463 (rev.); Mathis and Zatwarnicki, 2003: 596–599 (review, Seychelles).

Genus **Mimapsilopa** Cresson

Mimapsilopa Cresson, 1941a: 36. Type species, *Clasiopella metatarsata* Cresson, 1939, orig. des.; Cresson, 1946: 153 (syn. with *Helaeomyia* Cresson). Refs.: Lizarralde de Grosso, 1982: 121–128 (rev.); Mathis & Zatwarnicki, 1998: 7–24 (rev., West Indian species).

colombiana Lizarralde de Grosso, 1982:126. Type locality, Colombia, Popayan (30 km N), HT M (USNM). Distr.: Colombia (Cauca (Popayán)).

Tribe **Psilopini** Cresson, 1925

Genus **Ceropsilopa** Cresson

Ceropsilopa Cresson, 1917b: 340. Type species, *Ceropsilopa nasuta* Cresson, 1917b, orig. des.

Pelec Cresson, 1925: 235. Type species, *Pelec purimana* Cresson, 1925, orig. des.; Cresson, 1945: 70 (syn.).

Batula Cresson, 1940: 2. Type species: *Psilopa mellipes* Coquillett, 1900b, orig. des.; Cresson, 1946: 157 (syn.).

coquilletti Cresson, 1922b: 136. Type locality, United States, California, Monterey: Pacific Grove. HT F (CU). Distr.: Australasian/Oceanian: Hawaiian Islands (Hawaii, Maui, Molokai, Kauai, Oahu). Nearctic: Bermuda, United States (California, Florida, Maryland). Neotropical: Argentina, Bahamas, Belize, Colombia, Grand Cayman, Mexico, Panama, Trinidad, Venezuela, West Indies (Haiti, Puerto Rico).

Genus **Cressonomya** Arnaud

Plagiops Cresson, 1918: 53. Type species, *Plagiops nitidifrons* Cresson, 1918, orig. des. Preocc., Townsend, 1911 (Diptera: Tachinidae).

Plagiopsis Cresson, 1934: 201 (replacement name for *Plagiops* Cresson, 1918). Type species, *Plagiops nitidifrons* Cresson, 1918.

Cressonomya Arnaud, 1958: 24 (replacement name for *Plagiopsis* Cresson, 1934). Type species, *Plagiops nitidifrons* Cresson, 1918. Refs.: Mathis & Zatwarnicki, 2004: 249–279 (rev.).

aciculata Loew, 1862: 142 (*Psilopa*). Type locality, West Indies, Cuba, Holguín: Santa Lucia (3 km N; 21°03.3'N, 75°59.8'W). NT M (des. by Mathis & Zatwarnicki, 2004: 256) (USNM). Distr.: United States (Texas), Bahamas, Belize, Brazil (Rio de Janeiro), Colombia (Magdalena), Costa Rica (Alajuela, Cartago, Guanacaste, Limón, Puntarenas, San José), El Salvador, Guyana, Honduras, Mexico (Chiapas, Jalisco, Tabasco, Veracruz), Panama, Paraguay, Peru, Trinidad and Tobago, Venezuela, West Indies (Cuba, Dominican Republic, Grenada, Haiti, Jamaica, Montserrat, Puerto Rico, St. Vincent). Refs.: Williston, 1896: 394 (rev.); Mathis & Zatwarnicki, 2004: 255–262 (rev.).

Genus **Leptopsilopa** Cresson

Leptopsilopa Cresson, 1922b: 136. Type species, *Psilopa similis* Coquillett, 1900a, orig. des. Refs.: Mathis & Zatwarnicki, 2006: 85–138 (review, New World species).

flavicoxa Mathis & Zatwarnicki, 2006: 111. Type locality, Belize, Sann Creek: Cockscomb Basin Wildlife Sanctuary ($16^{\circ}47'N$, $88^{\circ}30'W$). HT M (USNM). Distr.: Neotropical: Argentina, Belize, Bolivia (La Paz), Brazil (Bahia, Paraná, Rio de Janeiro, Santa Catarina), Colombia (Antioquia), Costa Rica (Alajuela, Cartago, Guanacaste, Heredia, Limón, Puntarenas, San José), Ecuador (Los Ríos, Manabí, Orellana, Pichincha), El Salvador, Guyana, Honduras, Mexico (Chiapas, Guerrero), Nicaragua, Panama (Canal Zone), Trinidad & Tobago, Venezuela (Barinas, Sucre).

subapicalis Cresson, 1922b: 136. Type locality, Trinidad & Tobago, Trinidad, Port of Spain ($10^{\circ}39'N$, $61^{\circ}31'W$). HT F (HNHM), (ANSP). Distr.: Neotropical: Colombia (Magdalena (Aracataca)), Costa Rica, Honduras, Panama, Trinidad, Venezuela. Refs.: Cresson, 1938: 30, 31 (key; review); 1946: 156, 162 (review; key); Wirth, 1968: 10 (Neotropical catalog); Lizarralde de Grosso, 1989: 28 (list, Argentina); Mathis & Zatwarnicki, 1995: 37 (world cat.); 2006: 130–133 (rev.).

Genus **Peltopsilopa** Hendel

Peltopsilopa Hendel, 1914b: 156. Type species, *Peltopsilopa aspistes* Hendel, 1914b, orig. des. Refs.: Malloch, 1941: 125–126 (review). Savaris *et al.* 2016: 83–98 (rev.).

anisotomoides Karsch, 1884: 173 (*Celyphus*). Type locality, “Bengal”. HT F (ZMHU). Distr.: Neotropical: Brazil (Maranhão, Pernambuco), Colombia (Magdalena), Ecuador (Guayas, Sucumbiois), Venezuela (Carabobo). Refs.: Savaris, *et al.*, 2016: 92–96 (rev., generic comb., syn. with *P. aspistes* Hendel).

Genus **Psilopa** Fallén

Psilopa Fallén, 1823: 6. Type species, *Notiphila nitidula* Fallén, 1813, subs. des. by Rondani, 1856: 132.

Hygrella Haliday, 1839: 223 (as a subgenus of *Notiphila*). Type species, *Notiphila nitidula* Fallén, 1813, subs. des. by Westwood, 1840: 153; Loew, 1860: 8 (syn.).

Ephygrobia Schiner, 1862: 432 (unnecessary replacement name for *Psilopa* Fallén).

Diasemocera Bezzii, 1895: 137 (as a subgenus of *Psilopa*). Type species, *Psilopa nigrotaeniata* Bezzii, 1895 (= *Psilopa roederi* Girschner, 1889), mon.; Becker, 1896: 135 (syn. with *Ephygrobia* Schiner).

Domina Hutton, 1901: 90. Type species, *Domina metallica* Hutton, 1901, mon.; Tonnoir & Malloch, 1926: 12 (syn.).

Discocerinella Mercier, 1927: 123. Type species, *Discocerinella omonvillea* Mercier, 1927 (= *Notiphila pulicaria* Haliday, 1839), orig. des.; Collin, 1942: 149 (syn.).

metallina Becker, 1919: 203 (*Leptopsilopa*). Type locality, Ecuador, La Rinconada (3200 m), Cuenca (2532), Tulcan (3002 m). LT M (des. by Mathis & Zatwarnicki, 2006: 134) (MNHN). Distr.: Neotropical: Colombia, Ecuador, Peru. Refs.: Mathis & Zatwarnicki, 2006: 133–134 (review, transferred back to *Psilopa*).

Leptopsilopa metallina; Wirth, 1968: 10 (generic combination); Mathis & Zatwarnicki, 1995: 36 (world cat.).

pulchripes Loew, 1878: 197. Type locality, United States, “Texas”. ST F (MCZ). Distr.: Nearctic: United States (Florida, Illinois, Massachusetts, Texas). Neotropical: Brazil, Bolivia, Colombia, Ecuador, Mexico, Panama, Peru, Paraguay, West Indies (Dominica, Puerto Rico).

Subfamily **Hydrelliinae** Robineau-Desvoidy, 1830

Tribe **Atissini** Cresson, 1942

Genus **Paralimna** Loew

Refs.: Ale-Rocha & Mathis 2015: 1–148 (rev.).

Paralimna Loew, 1862: 138. Type species, *Paralimna appendiculata* Loew, 1862 (= *Notiphila punctipennis* Wiedemann, 1830), mon.

Subgenus **Paralimna** Loew

Paralimna Loew, 1862: 138 (as a genus). Type species, *Paralimna appendiculata* Loew, 1862 (= *Notiphila punctipennis* Wiedemann, 1830), mon.

Poecilothorax Becker, 1922: 73 (as a genus). Type species, *Poecilothorax angustus* Becker, 1922 (= *Paralimna puncticollis* Becker, 1922), mon.; Cresson, 1947b: 108 (syn.).

meridionalis Cresson, 1916: 119. Type locality, Costa Rica. Cartago: La Carpentera. HT M (ANSP 6092). Distr.: Neotropical: Costa Rica (Alajuela, Cartago, Guanacaste, Heredia, Paraíso, Puntarenas, San José), Colombia (Santander), Ecuador (Cotopaxi, El Oro, Guayas, Loja, Napo, Orellana, Pastaza, Pichincha, Tungurahua, Zamora-Chinchipe), Guyana (Mazaruni-Potaro), Panamá (Chiriquí, Coclé, Guna Yala, Panamá, Veraguas), Peru (Huánuco), Venezuela (Lara, Zulia). Refs.: Ale-Rocha and Mathis, 2015: 47–51 (rev.).

molossus Schiner, 1868: 242. Type locality, “Venezuela”. LT F (des. by Cresson, 1929: 192) (NMW). Distr.: Neotropical: Argentina (Misiones), Bolivia (Bení, La Paz, Santa Cruz), Brazil (Minas Gerais, Santa Catarina, São Paulo), Chile (Arica and Parinacota, Tarapaca), Colombia (Magdalena), Ecuador (Azuay, Guayas, El Oro), Paraguay (Guaira, Pirapó), Peru (Cuzco, El Conde, Huánuco, Junín, Lima, Loreto, Madre de Dios), Trinidad and Tobago, Venezuela (Barinas, Bolívar Carabobo, Lara). Refs.: Ale-Rocha and Mathis, 2015: 51–54 (rev.).

secunda Schiner, 1868: 241. Type locality, “Venezuela”; LT F (des. by Cresson 1929: 185) (NMW). Distr.: Neotropical: Belize (Stann Creek), Bolivia (Bení, La Paz), Brazil (Amazonas, Pará, São Paulo, Tocantins), Colombia (Magdalena), Ecuador (El Oro, Guayas, Loja, Orellana, Sucumbíos), El Salvador (La Libertad, San Salvador, Santa Ana), Guatemala (Chimaltango, Escuintla, Guatemala, Iazabal, Zacapa), Guyana, Mexico (Chiapas, Veracruz-Llave), Panamá (Coclé, Panamá), Paraguay (Asunción, President Hayes), Peru (Cuzco, Loreto), Trinidad and Tobago, Venezuela (Amazonas, Carabobo), West Indies (Cuba). Refs.: Ale-Rocha and Mathis, 2015: 84–89 (rev.).

thomae Wiedemann, 1830: 593. Type locality, St. Thomas (18°21'N, 64°56'W); ST M (UZMC). Distr.: Nearctic: Mexico (Colima, México, Morelos, San Luis Potosí, Tamaulipas). United States (Arizona, California, Florida, Texas). Neotropical: Bahamas, Belize (Corazal, Stann Creek), Bolivia, Colombia, Costa Rica (Cartago, Guanacaste, Heredia, Puntarenas), Ecuador (Chimborazo, El Oro, Guayas, Loja, Manabí, Pastaza), El Salvador, Guatemala (Escuintla, Izabal, Zacapa), Guatemala (Escuintla), Guyana, Honduras (Cortés), Mexico (Chiapas, Cuernavaca, Oaxaca, Tabasco, Veracruz-Llave), Nicaragua, Panamá (Coclé, Herera), Peru (Lima, Loreto, Madre de Dios), Trinidad and Tobago, Venezuela (Carabobo, Lara, Zulia), West Indies (Barbados, British Virgin Islands Cuba, Dominica, Dominican Republic, Grand Cayman, Grenada, Guadeloupe, Haiti, Jamaica, Navassa, Puerto Rico, St. Croix, St. Lucia, St. Thomas, St. Vincent, Trinidad). Refs.: Cogan and Wirth, 1977: 335 (generic comb.). Ale-Rocha and Mathis, 2015: 102–109 (rev.).

Subgenus **Phaiosterna** Cresson

Phaiosterna Cresson, 1916: 104. Type species, *Paralimna decipiens* Loew, 1878, orig. des. Refs.: Cresson, 1947a: 54–55 (review, Neotropical species); 1947b: 115–117 (review, Afrotropical species, key); 1948: 9–11 (review, Australasian species, key); Wirth, 1965: 748 (Nearctic catalog); 1968: 16 (Neotropical catalog); Cogan & Wirth, 1977: 334 (syn. with *Paralimna*); Cogan, 1980: 663–664 (Afrotropical catalog, as the subgenus *Paralimna* in part); Mathis & Zatwarnicki, 1995: 126–127 (world cat.); 2002: 67–88 (rev.).

decipiens Loew, 1878: 195. Type locality, United States, “Texas”. ST M (MCZ). Distr.: Nearctic: Bermuda, United States (Alabama, Arizona, Arkansas, California, Florida, Georgia, Indiana, Michigan, Mississippi, Louisiana, New Jersey, North Carolina, South Carolina, Texas, Virginia). Neotropical: Argentina, Belize, Bolivia (La Paz), Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Guyana, Honduras, Mexico (Jalisco, Sonora, Tamaulipas, Veracruz), Panama, Paraguay, Trinidad, Venezuela, West Indies (Barbados, Cuba, Dominica, Dominican Republic, Grand Cayman, Jamaica, Puerto Rico, St. Lucia, St. Vincent, Virgin Islands). Refs.: Osten Sacken, 1878: 201 (Nearctic catalog); Becker, 1896: 270 (list, Texas); Coquillett, 1900b: 259 (list, Puerto Rico); Aldrich, 1905: 624 (Nearctic catalog); Jones, 1906: 178–179 (key, catalog); Thaxter, 1917: 672–675 (parasites: *Stigmatomyces rostratus* Thaxter, *S. paralimnae* Thaxter); 1931: 145–146 (parasite: *S. gracilior* Thaxter); Wirth & Stone, 1956: 470 (list, California).

obscura Williston, 1896: 391. Type locality, West Indies, St. Vincent. LT M (des. by Mathis & Edmiston, 1991: 832) (BMNH). Distr.: Nearctic: Bermuda, United States (California, Florida, Texas). Neotropical: Argentina, Bahamas, Belize, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guyana, Honduras, Mexico (San Luis Potosí), Panama, Paraguay, Trinidad & Tobago, West Indies (Barbados, Cuba, Dominican Republic, Grenada, Jamaica, Puerto Rico, St. Lucia, St. Thomas, St. Vincent, Virgin Islands). Refs.: Coquillett, 1900b: 259 (list, Puerto Rico); Aldrich, 1905: 624 (Nearctic cat.); Jones, 1906: 178–179 (key, cat.).

Tribe **Hydrelliini** Robineau-Desvoidy, 1830

Genus **Hydrellia** Robineau-Desvoidy

Hydrellia Robineau-Desvoidy, 1830: 790. Type species, *Hydrellia communis* Robineau-Desvoidy, 1830 (= *Notiphila griseola* Fallén, 1813), subs. des., Duponchel in d'Orbigny, 1845. Refs.: Collin, 1966: 7–18, 26 plates (review, European species); Deonier, 1971: 1–147 (rev. of Nearctic species); Zatwarnicki, 1988: 587–634 (notes and cat. of species); Bock, 1990: 965–993 (rev. of Australian species).

Hydropota Rondani, 1861: 10 (unjustified replacement name for *Hydrellia* Robineau-Desvoidy, 1830).

griseola Fallén, 1813: 250 (*Notiphila*). Type locality, Sweden. ST ? (ZIL). Distr.: Australasian/Oceanian: Australia (Queensland). Nearctic: Bermuda, Canada (Alberta, British Columbia, Manitoba, Nova Scotia, Ontario, Quebec, Saskatchewan), United States (Alaska, Alabama, Arkansas, California, Connecticut, District of Columbia, Florida, Georgia, Idaho, Iowa, Indiana, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Vermont, Washington, West Virginia, Wisconsin, Wyoming). Neotropical: Colombia. Oriental: Nepal, Philippines, Taiwan. Palearctic: Afghanistan, Algeria, Austria, Azores, Belgium, Canary Islands, China (Hefei, Xining, NE Tibet), Cyprus, Czech Republic, Denmark, Egypt, Estonia, Faroe Islands, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Italy, Japan (Hokkaido, Honshu), Macedonia, Madeira Islands, Malta, Morocco, Netherlands, Norway, Oman, Poland, Romania, Russia (European Territory), Slovakia, Spain, Sweden, Switzerland, Tunisia, Ukraine, Yugoslavia. Refs.: Macquart, 1835: 523 (generic combination); Lilljeborg, 1861: 205–215 (biology); Deonier, 1971: 63–69 (revision, immature stages; host plant: *Nasturtium officinale* Brown (Brassicaceae)); Deonier, 1998: 139–149 (revision, North America); Mathis & Zatwarnicki, 1995: 74–78 (world cat.).

wirthi Korytkowski, 1982: 2. Type locality, Peru, Lambayeque: Ferreñafe. HT M (UPRG), biology; host plants: *Oryza sativa* L., *Paspalum* species (Poaceae). Distr.: Nearctic: United States (Louisiana, Texas). Neotropical: Colombia (Valle del Cauca (Jamundí)), Costa Rica, Peru. Refs.: Pantoja *et. al.*, 1993: 1820–1823 (pest in Colombia); Pantoja & Salazar, 1993: 378–379 (ovopositional preference); Salazar *et. al.*, 1993: 38–40 (biology); Mathis & Zatwarnicki, 1995: 94 (world cat.).

Tribe **Notiphilini** Bigot, 1853

Genus **Notiphila** Fallén, 1810

Subgenus **Agrolimna** Cresson

Agrolimna Cresson, 1917a: 48. Type species, *Notiphila scalaris* Loew, 1862, orig. des.

frontalis Coquillett, 1904: 97. Type locality, Nicaragua, Managua. LT M (des. by Cresson, 1917a: 57) (USNM). Dist.: Neotropical: Argentina, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Nicaragua, Panama. *Notiphila pulchrifrons* Williston, 1897: 5 (preocc., Loew, 1872; “Brazil”; ST M (AMNH), (BMNH) (apparently lost). Cresson, 1917a: 56 (syn.).

Subfamily **Gymnomyzinae** Latreille, 1829

Tribe **Discocerinini** Cresson, 1925

Genus **Discocerina** Macquart

Discocerina Macquart, 1835: 527. Type species, *Notiphila pusilla* Meigen, 1830 (= *Notiphila obscurella* Fallén, 1813), subs. des. by Cresson, 1925: 253.

Dioscocerina. Incorrect original spelling of *Discocerina* (Macquart, 1835: 528).

Clasiopa Stenhammar, 1844: 159 (*Psilopa* "Sectio 1"). Type species, *Notiphila obscurella* Fallén, 1813, original designation; Haliday, 1855: 57 (syn.).

chalybea Hendel, 1930: 138. Type locality, Argentina, Lapango, Pilcomayo. ST M/F (NMW), (SMN). Distr.: Nearctic: United States (Alabama, Arkansas, District of Columbia, Iowa, Louisiana, Missouri, Nevada, Tennessee, Texas, Virginia, West Virginia). Neotropical: Argentina, Bolivia, Colombia, Ecuador (Puerto Orellana), Mexico (Veracruz, Sonora), Paraguay, Trinidad and Tobago, West Indies (Dominican Republic, Jamaica, Puerto Rico). Refs.: Zatwarnicki & Mathis, 2001: 22 (*obscurella* group).

flavipes Cresson, 1941a: 35. Type locality, United States, California, Kern (Bakersfield). HT M (ANSP). Distr.: Nearctic: United States (California, Arizona). Neotropical: Argentina, Belize, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Panama, Paraguay, Peru, Venezuela, West Indies (Dominica, Puerto Rico, St. Thomas). Refs.: Zatwarnicki & Mathis, 2001: 22 (*obscura* group).

nitida Cresson, 1918: 57. Type locality, Costa Rica, Guapiles (1100 ft); HT M (ANSP). Distr.: Neotropical: Argentina, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, Paraguay, Peru, Venezuela. Refs.: Zatwarnicki & Mathis, 2001: 22 (*obscurella* group).

obscurella Fallén, 1813: 251, (*Notiphila*). Type locality, Sweden; ST F (ZIL). Distr.: Afrotropical: Cape Verde Islands, Kenya, Rodriguez Islands, Zaire. Nearctic: Canada (New Foundland, Ontario, Quebec), United States (Alaska, Alabama, Arkansas, Arizona, California, Connecticut, District of Columbia, Florida, Georgia, Iowa, Illinois, Indiana, Kansas, Louisiana, Maine, Massachusetts, Maryland, Michigan, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, Nevada, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington). Neotropical: Argentina, Bahamas, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico (Veracruz), Panama, Paraguay, Peru, Venezuela, West Indies (Cuba, Dominica, Jamaica, Puerto Rico, St. Thomas). Palearctic: Austria, Algeria, Azores, Belgium, Bulgaria, Canary Islands, Croatia, Czech Republic, Estonia, Finland, France, Germany, Great Britain, Hungary, Iran, Italy, Jordan, Macedonia, Madeira Islands, Morocco, Netherlands, Poland, Romania, Russia (European Territory, Far East), Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Yugoslavia. Refs.: Haliday, 1839: 224 (generic combination); Mathis & Zatwarnicki, 1995: 166–168 (world catalog); 2010: 107–110 (revision); Zatwarnicki & Mathis, 2001: 22 (*obscurella* group).

Genus **Hydrochasma** Hendel

Hydrochasma Hendel, 1936: 101. Type species, *Hydrochasma zernyi* Hendel, 1936 (= *Discocerina faciale* Williston, 1896), mon.

leucoproctum Loew, 1861: 355 (*Discocerina leucoprocta*). Type locality, United States, "Maryland"; HT F (MCZ). Distr.: Nearctic: United States (Florida, Iowa, Maine, Massachusetts, Maryland, Minnesota, Virginia). Neotropical: Argentina, Bolivia, Colombia (Valle del Cauca), Costa Rica, Ecuador, Guatemala, Mexico, Panama, Venezuela, West Indies (Jamaica).

Hydrochasma leucoproctum, Cresson, 1942: 113 (generic comb.). Mathis & Zatwarnicki, 2013: 132–140 (revision).

Genus **Lamproclasiopa** Hendel

Lamproclasiopa Hendel, 1933: 79 (as a subg. of *Discocerina*). Type species, *Lamproclasiopa facialis* Hendel 1933, orig. des. Refs.: Zatwarnicki & Mathis, 2001: 36 (generic status).

Basila Cresson, 1942: 116. Type species, *Ditrichophora nadinae* Cresson, 1925, orig. des. Refs.: Zatwarnicki & Mathis, 2001: 36 (syn.).

aracataca Cresson, 1940: 5 (*Discocerina*). Type locality, Colombia, Aracataca. HT F (ANSP 6541). Distr.: Neotropical: Chile, Colombia (Magdalena (Aracataca)). Refs.: Zatwarnicki & Mathis, 2001: 36 (generic combination).

nana Williston, 1896: 396 (*Discocerina*). Type locality, West Indies, St. Vincent. LT M (designated by Mathis & Edmiston, 1991: 824) (BMNH). Distr.: Neotropical: Costa Rica, Colombia, West Indies (Dominican Republic, Dominica, Puerto Rico, St. Vincent). Refs.: Cresson, 1924: 159 (generic comb. as *Ditrichophora nana*); Zatwarnicki & Mathis, 2001: 39 (generic comb.).

Genus **Polytrichophora** Cresson

Polytrichophora Cresson, 1924: 161. Type species, *Polytrichophora agens* Cresson, 1924, orig. des. Refs.: Mathis & Zuyin, 1989: 436–437 (rev. of Asian species); Mathis & Zatwarnicki, 2012: 25–116 (rev. of New World species).

barba Mathis & Zatwarnicki, 2012: 46. Type locality, Cuba, Sancti Spiritus, Topes de Collantes (21°54.4'N, 80°01.4'W, 670 m). HT M (USNM). Distr.: Nearctic: Bermuda. Neotropical: Argentina (Tucumán), Bolivia (Beni), Colombia (Valle del Cauca), Ecuador (El Oro, Guayas, Manabi), Guyana, Peru (Cuzco, Loreto, Madre de Dios), Trinidad and Tobago, West Indies (Barbados, Cuba, Dominican Republic, Jamaica, Puerto Rico).

Tribe **Gastropini** Cresson, 1949

Genus **Beckeriella** Williston

Beckeriella Williston, 1897: 2. Type species, *Ephydra bispinosa* Thomson, 1869 (= *Scatophaga bispinosa* Fabricius, 1805), mon. Refs.: Cresson, 1934: 201–205 (review); Lizarralde de Grosso, 1998: 41–56 (rev.; syn. of *Gastrops* with *Beckeriella*).

bispinosa Fabricius, 1805: 210, (*Scatophaga*). Type locality, “America Meridionali”; ST ? (depository unknown). Distr.: Neotropical: Brazil, Colombia (Valle del Cauca), Ecuador, Venezuela. Refs.: Lizarralde de Grosso, 1990: 144–146 (rev.); Williston, 1897: 2 (generic comb.).

clypeata Lizarralde de Grosso, 1986: 134. Type locality, Colombia, Rio Raposo. HT F (CAS). Distr.: Neotropical: Colombia (Valle del Cauca (Rio Raposo)).

paragigas Lizarralde de Grosso, 1991: 39. Type locality, Colombia, Bogotá. HT M (USNM). Distr.: Neotropical: Colombia (Bogotá).

schildi Cresson, 1934: 203. Type locality, Costa Rica, Alajuela, Higuito, San Mateo; HT F (USNM). Distr.: Neotropical: Colombia, Costa Rica, Venezuela. Refs.: Lizarralde de Grosso, 1991: 41 (rev.).

Genus **Gastrops** Williston

Gastrops Williston, 1897: 3. Type species, *Gastrops niger* Williston, 1897, mon. Refs.: Wirth, 1958: 247–250 (rev.). *Ventrops* Grossbeck, 1912: 378 (unavailable name, published as a syn. of *Gastrops* Williston). *Beckeriella* Lizarralde de Grosso, 1998: 41–56 (review; syn. of *Gastrops* with *Beckeriella*).

fuscivenosus Wirth, 1958: 248. Type locality, Costa Rica, Alajuela: Higuito, San Mateo. HT M (USNM). Distr.: Neotropical: Colombia, Costa Rica, El Salvador, Honduras. Refs.: Lizarralde de Grosso, 1984: 74 (review). *Beckeriella fuscivenosa*; Lizarralde de Grosso, 1998: 46 (generic comb.).

niger Williston, 1897: 3. Type locality, “Grenada and Rio de Janeiro”. ST M/F (AMNH). Distr.: Nearctic: United States (Texas). Neotropical: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico (Oaxaca), Nicaragua, Panama, Peru, Trinidad, Venezuela, West Indies (Dominica, Grenada). Refs.: Bokerman, 1957: 231–232 (host: egg cluster of frog *Physalaemus cuvieri* Fitzinger (Leptodactylidae); Wirth, 1958: 249–250 (review); Lizarralde de Grosso, 1984: 72 (review)).

Beckeriella niger; Lizarralde de Grosso, 1998: 49 (generic comb.). Refs.: Menin & Giaretta, 2003: 239–243 (biology).

Tribe **Gymnomyzini** Latreille, 1829

Genus **Athyroglossa** Loew

Athyroglossa Loew, 1860: 12. Type species, *Notiphila glabra* Meigen, 1830, mon. Refs.: Wirth, 1970a: 315–319 (review, Nearctic species); Mathis & Zatwarnicki, 1990: 103–133 (rev. of western Palearctic species).

Subgenus **Athyroglossa** Loew

Athyroglossa Loew, 1860: 12. Type species, *Notiphila glabra* Meigen, 1830, mon.

Ochtheroidea Williston, 1896: 401 (as a genus). Type species, *Ochtheroidea atra* Williston, 1896, mon. Refs.: Cresson, 1922a: 334–335 (rev.); Hendel, 1931: 67 (syn.).

atra Williston, 1896: 401, (*Ochtheroidea*). Type locality, West Indies, St. Vincent. LT M (des. by Mathis & Edmiston, 1991: 819) (BMNH). Distr.: Neotropical: Colombia, Costa Rica, Ecuador, El Salvador, Mexico (Chiapas, Guerrero, San Luis Potosí, Veracruz), Panama, Trinidad, Venezuela, West Indies (Barbados, Dominica, Grenada, Jamaica, St. Vincent). Refs.: Cresson, 1922a: 337–338 (rev.); Wirth, 1968: 3 (syn. with *Athyroglossa glaphyropus* Loew).

fascipennis Cresson, 1918: 60, (*Ochtheroidea*). Type locality, Colombia, Aracataca; HT M (HNHM). Distr.: Neotropical: Brazil, Colombia (Magdalena (Aracataca)), Costa Rica, Ecuador, Panama, Peru, Venezuela. Refs.: Cresson, 1922a: 336–337 (rev.).

nitida Williston, 1896: 397. Type locality, West Indies, St. Vincent. LT F (des. by Mathis & Edmiston, 1991: 821) (BMNH). Distr.: Neotropical: Bolivia, Colombia, Costa Rica, Ecuador, Guyana, Mexico (Chiapas, San Luis Potosí, Tampico, Veracruz), Panama, Venezuela, West Indies (Cuba, Dominica, Puerto Rico, St. Vincent). Refs.: Cresson, 1946: 135 (generic comb.); Hendel, 1930: 140 (generic comb.).

similis Cresson, 1918: 61, (*Ochtheroidea*). Type locality, Costa Rica, Cartago: Cachí, Río Revenatzòn (beach). HT M (ANSP). Distr.: Neotropical: Bolivia, Colombia, Costa Rica, Ecuador, Mexico (Chiapas), Panama, West Indies (Dominica, Virgin Islands). Refs.: Cresson, 1922a: 338–339 (rev.).

Genus **Cerometopum** Cresson

Cerometopum Cresson, 1914: 241. Type species, *Cerometopum mosilloides* Cresson, 1914, orig. des. Refs.: Cresson, 1922a: 324 (rev.).

mosilloides Cresson, 1914: 242. Type locality, Colombia, Barranquilla. HT M (HNHM). Distr.: Neotropical: Argentina, Colombia (Atlántico (Barranquilla)), Paraguay. Refs.: Cresson, 1922a: 324–343 (rev.).

Tribe **Hecamedini** Mathis, 1991

Genus **Diphuia** Cresson

Diphuia Cresson, 1944: 3. Type species, *Diphuia anomala* Cresson, 1944, orig. des. Refs.: Mathis, 1990: 746–756 (rev.); 1997a: 28–36 (review); Mathis & Marinoni, 2010: 803–812 (review; species groups).

anomala Cresson, 1944: 4. Type locality, Panama, Canal Zone: Monte Lirio. HT M (USNM). Distr.: Neotropical: Colombia, Ecuador, Panama, West Indies (Dominica). Refs.: Mathis, 1990: 749–750 (rev.); Mathis & Marinoni, 2010: 806 (review).

Tribe **Ochtherini** Dahl, 1959

Genus **Ochthera** Latreille

Ochthera Latreille, (1802): 462. Type species, *Musca manicata* Fabricius, 1794, subs. Des., Latreille, 1810: 444. Refs.: Clausen, 1977: 451–529 (rev. of Holarctic and Neotropical species); 1980: 205–222 (rev. of some Neotropical species); Zhang & Yang, 2006: 1–22 (review, Chinese fauna).

Subgenus **Ochthera** Latreille

Ochthera Latreille, (1802): 462 (as genus). Type species, *Musca manicata* Fabricius, 1794, subs.t des., Latreille, 1810: 444. *Macrochira* Meigen, 1803: 278 (as genus). Type species, *Musca manicata* Fabricius, 1794, mon.; Robineau-Desvoidy, 1830: 786 (syn.).

Ochtera, error for *Ochthera*.

Stenochthera Hendel, 1930: 131 (as genus). Type species, *Stenochthera angustifacies* Hendel, 1930, orig. des.; Clausen, 1980: 206 (syn.).

angustifacies Hendel, 1930: 132, (*Stenochthera*). Type locality, Bolivia, El Cairo. LT M (des. by Clausen, 1980: 211) (SMN). Distr.: Neotropical: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Jamaica, Mexico (Chiapas, Veracruz), Panama, Paraguay, Peru. Refs.: Clausen, 1980: 211 (generic comb., rev.); Raffone, 2013: 74 (list, Jamaica).

regalis Williston, 1897: 6. Type locality, Brazil, Rio de Janeiro. LT M (des. by Clausen, 1980: 218) (AMNH). Distr.: Neotropical: Argentina, Belize, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Honduras, Mexico (Chiapas, Guerrero, Nayarit, Oaxaca, Tabasco, Veracruz), Nicaragua, Panama, Peru, Surinam, Trinidad, Venezuela, West Indies (Cuba, Grand Cayman, Jamaica, Puerto Rico). Refs.: Clausen, 1980: 216–221 (rev.).

Subfamily **Ilytheinae** Cresson, 1943

Tribe **Hyadinini** Phillips *et al.*, 1949

Genus **Nostima** Coquillett

Nostima Coquillett, 1900a: 35. Type species, *Nostima slossonae* Coquillett, 1900a, orig. des. Refs.: Edmiston & Mathis, 2005: 1–108 (rev., New World fauna); 2007: 1–16 (rev., New Zealand fauna).

Philygriola Hendel, 1917: 42. Type species, *Notiphila picta* Fallén, 1813, orig. des.; Cresson, 1930a: 101 (syn.).

abbreviata Cresson, 1941b: 3. Type locality, Brazil, Rio de Janeiro: Grajahu. HT M (ANSP). Distr.: Neotropical: Brazil, Colombia, Costa Rica, Ecuador, Mexico (Veracruz), Panama, Venezuela. Refs.: Cresson, 1947a: 40 (review); Edmiston & Mathis, 2005: 11–13 (rev.).

franciscana Edmiston & Mathis, 2005: 29. Type locality, Jamaica, Runaway Bay. HT M (USNM). Distr.: Neotropical: Colombia (Cundinamarca, Valle del Cauca), Guatemala (Peten), West Indies (Cuba, Dominican Republic, Guadeloupe, Jamaica, Puerto Rico).

gilvipes (Coquillett), 1900b: 261, (*Hydrellia*). Type locality, Costa Rica, Rio Surubres, Bonnefil Farm (09°36'N, 84°18'W; 800 ft); NT M (des. by Edmiston & Mathis, 2005: 32) (ANSP). Distr.: Nearctic: United States (Florida). Neotropical: Belize (Cayo, Stann Creek), Brazil (Rio de Janeiro), Bolivia (La Paz), Colombia (Antioquia, Valle del Cauca), Costa Rica (Cartago, Puntarenas), Ecuador (Los Ríos, Manabi), El Salvador (La Libertad), Guatemala, Guyana, Honduras (Cortés), México (Chiapas, Guerrero, Puebla, Veracruz), Panama, Venezuela (Barinas), Trinidad, and West Indies (Cuba, Dominican Republic, Jamaica, St. Lucia). Refs.: Cresson, 1941b: 2 (generic comb.); Cresson, 1947a: 40 (review); Edmiston & Mathis, 2005: 31–34 (rev.).

ilytheoides Cresson, 1941b: 8. Type locality, Costa Rica, La Suiza de Turrialba. HT M (ANSP). Distr.: Neotropical: Brazil (Pernambuco), Colombia (Cundinamarca, Valle del Cauca), Costa Rica (Alajuela, Cartago, San José), Ecuador (Manabi, Pichincha), México (Hidalgo, México, Puebla), Peru (Lambayeque, Lima), Venezuela (Tachira). Refs.: Cresson, 1947a: 42 (review); Edmiston & Mathis, 2005: 36–38 (rev.).

niveivenosa Cresson, 1930b: 80. Type locality, West Indies, Puerto Rico, Aguadilla; HT F (USNM). Distr.:

Nearctic: United States (Florida). Neotropical: Bahamas, Belize (Stann Creek), Bolivia (La Paz), Brazil (Rio de Janeiro), Colombia (Antioquia), Costa Rica (Cartago, Puntarenas, San José), Ecuador (Orellana), El Salvador (La Libertad, San Salvador, Santa Ana), Guyana, Honduras (Francisco), México (Chiapas, Guerrero, Morelos, Nuevo Leon, Sonora, Tamaulipas), Panama (Canal Zone, Coclé, Darién), Trinidad, Venezuela, West Indies (Antigua, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Jamaica, Puerto Rico, St. Lucia, St. Martin). Refs.: Cresson, 1947a: 41 (review); Edmiston & Mathis, 2005: 52–55 (rev.).

pulchra Williston, 1896: 399, (*Hydrellia*). Type locality, West Indies, St. Vincent. HT M (BMNH). Distr.: Nearctic: United States (Florida). Neotropical: Argentina (Buenos Aires, Catamarca, Chaco, Iguazu), Belize (Cayo), Bolivia (La Paz), Brazil (Santa Catarina), Colombia (Antioquia, Bolívar, Valle del Cauca), Costa Rica (Alajuela, Puntarenas, San José), El Salvador (La Libertad), Guatemala (Suchitepéquez), Guyana, Honduras (Cortés), México (Chiapas, Guerrero, Michoacan, Nayarit, Veracruz), Panama (Canal Zone), Paraguay (Central), Peru (Huánaco, Loreto), West Indies (Dominica, Dominican Republic, Guadeloupe, Haiti, Puerto Rico, St. Vincent). Refs.: Cresson, 1947a: 42 (review); Edmiston & Mathis, 2005: 60–63 (rev.); Hendel, 1930: 141 (generic comb.).

slossonae Coquillett, 1900a: 35. Type locality, United States, Florida, Dade: Biscayne Bay. HT F (USNM). Distr.: Nearctic: United States (Florida, North Carolina). Neotropical: Argentina (Salta Tucumán), Bolivia (La Paz), Brazil (Santa Catarina, São Paulo), Colombia (Cundinamarca, Cauca), Costa Rica (Alajuela, Cartago, San José), Ecuador (Chimborazo, El Oro, Pichincha), Guatemala (Chimaltenango), México (Puebla, San Luis Potosí, Veracruz), Panama (Chiriquí), Paraguay (Central), Peru (Cuzco, Huánaco), West Indies (Cuba, Dominican Republic). Refs.: Cresson, 1947a: 42 (review); Edmiston & Mathis, 2005: 69–72 (rev.).

Tribe **Ilytheini** Cresson, 1943

Genus **Zeros** Cresson

Zeros Cresson, 1943: 10. Type species, *Ilythea obscura* Cresson, 1918, orig. des. Refs.: Cresson, 1943: 10–16 (review); Zhang *et al.*, 2007: 872–879 (review, species from China).

flavipes Williston, 1896: 403, (*Ilythea*). Type locality, West Indies, St. Vincent. LT M (des. by Mathis & Edmiston, 1991: 834) (BMNH). Distr.: Afrotropical: Zaire. Nearctic: Bermuda, Canada (Ontario), United States (Iowa, Florida, Ohio, Texas, Virginia). Neotropical: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Mexico (Sinaloa, Sonora, Tampico), Panama, West Indies (Cuba, Jamaica, Puerto Rico, St. Vincent). Refs.: Cresson, 1943b: 14 (generic combination, review); Scheiring & Connell, 1979: 609–612 (egg); Hollmann-Schirrmacher, 1998: 26–29 (revision).

Subfamily **Ephydrinae** Zetterstedt, 1837

Tribe **Dagini** Mathis, 1982

Genus **Diedrops** Mathis & Wirth

Diedrops Mathis & Wirth, 1976: 126. Type species, *Diedrops aenigma*, Mathis & Wirth, 1976, orig. des. Refs.: Mathis, 1982: 6–10 (review).

roldanorum Mathis & Hogue, 1986: 23. Type locality, Colombia, Tolima, Boquerón (3 km W). HT M (LACM). Puparium, biology; parasitoides: *Trichopria* species (Diapriidae), new genus (Eucollidae). Distr.: Neotropical: Colombia (Tolima (Boquerón)).

Genus **Physemops** Cresson

Physemops Cresson, 1934: 211. Type species, *Psilephydra nemorosa* Cresson 1914, original designation. Refs.: Wirth, 1970b: 170–177 (review); Mathis, 1982: 10–20 (review).

fairchildi Wirth, 1970b: 173. Type locality, Panama, Cerro Campana. HT M (USNM). Distr.: Neotropical: Panama, Colombia (vicinity of Bogota and Medellin). Refs.: Mathis, 1982: 18 (review).

wheeleri Wirth, 1970b: 176. Type locality, Panama, Canal Zone, Las Cruces Trail. HT F (USNM). Distr.: Neotropical: Ecuador, Colombia, Panama. Refs.: Mathis, 1982: 16–18 (review).

Tribe **Parydrini** Wirth & Stone, 1956

Genus **Parydra** Stenhammar

Parydra Stenhammar, 1844: 144 (as “Sectio 3” of *Ephydra*). Type species, *Ephydra aquila* Fallén, 1813, subs. des., Coquillett, 1910: 585. Refs.: Clausen & Cook, 1971: 20–100 (rev. of Nearctic species); Krivosheina, 1989: 209–219 (rev. of Russian species); Mathis & Marinoni, 2011: 505–512 (review, Brazilian species).

Subgenus **Chaetoapnaea** Hendel

Chaetoapnaea Hendel, 1930: 150. Type species, *Ephydra pusilla* Meigen, 1830, orig. des.

nigripes Cresson, 1918: 64, (*Napaea*). Type locality, Costa Rica, Cartago (sweeping over mud). HT M (ANSP). Distr.: Neotropical: Argentina, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico (Chihuahua, Durango). Refs.: Wirth, 1968: 22 (generic combination); Clausen 1985: 378–382 (revision).

Tribe **Scatellini** Wirth & Stone, 1956

Genus **Limnellia** Malloch

Limnellia Malloch, 1925: 331. Type species, *Limnellia maculipennis* Malloch, 1925, orig. des. Refs.: Andersson, 1971: 53–59 (review, European species); Mathis, 1978: 250–293 (rev. of Nearctic species); Zhang & Yang, 2009: 558–64 (review, Chinese fauna); Krivosheina, 2012: 1–7 (review, Russian species).

Eustigoptera Cresson, 1930a: 126. Type species, *Notiphila quadrata* Fallén, 1813, orig. des.; Cresson, 1935: 362 (syn).

Stictoscatella Collin, 1930: 133. Type species, *Notiphila quadrata* Fallén, 1813, orig. des.; Cresson, 1935: 362 (syn).

Stranditella Duda, 1942: 30 (as a subg. of *Lamproscatella*). Type species, *Notiphila quadrata* Fallén, 1813, orig. des. Refs.: Dahl, 1959: 126 (syn).

huachuca Mathis, 1978: 270. Type locality: United States, Arizona, Cochise, Huachuca Mountains, Ramsey Canyon, Sierra Vista (24 km S; 6,000 ft). HT M (CNC). Distr.: Nearctic: United States (Arizona). Neotropical: Colombia, Mexico (Michoacan), West Indies (Dominican Republic, Jamaica, Puerto Rico).

TABLE 1. Ephydriidae species recorded from Colombia.

Subfamily	Tribe	Genus	Species	Author
Discomyzinae	Discomyzini	<i>Clasiopella</i>	<i>uncinata</i>	Hendel, 1941
		<i>Mimapsilopa</i>	<i>colombiana</i>	Lizarralde de Grosso, 1982
	Psilopini	<i>Ceropsilopa</i>	<i>coquilletti</i>	Cresson, 1922
		<i>Cressonomyia</i>	<i>aciculata</i>	(Loew, 1862)
		<i>Leptopsilopa</i>	<i>flavicoxa</i>	Mathis & Zatwarnicki, 2006
			<i>subapicalis</i>	Cresson, 1922
		<i>Peltopsilopa</i>	<i>anisotomoides</i>	Karsch, 1884
		<i>Psilopa</i>	<i>metallina</i>	(Becker, 1919)
			<i>pulchripes</i>	Loew, 1878
Hydrelliinae	Atissini	<i>Paralimna</i> (<i>Paralimna</i>)	<i>molossus</i>	Schiner, 1868

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TABLE 1. (Continued)

Subfamily	Tribe	Genus	Species	Author
			<i>meridionalis</i>	Cresson, 1916
			<i>thomae</i>	Wiedemann, 1830
			<i>secunda</i>	Schiner, 1868
		<i>Paralimna (Phaiosterna)</i>	<i>decipiens</i>	Loew, 1878
			<i>obscura</i>	Williston, 1896
	Hydrelliini	<i>Hydrellia</i>	<i>griseola</i>	(Fallén, 1813)
			<i>wirthi</i>	Korytkowski, 1982
	Notiphilini	<i>Notiphila (Agrolimna)</i>	<i>frontalis</i>	Coquillett, 1904
Gymnomyzinae	Discocerinini	<i>Discocerina</i>	<i>flavipes</i>	Cresson, 1941
		The <i>obscura</i> Group		
			<i>chalybea</i>	Hendel, 1930
			<i>nitida</i>	Cresson, 1918
			<i>obscurella</i>	(Fallén, 1813)
		<i>Hydrochasma</i>	<i>leucoproctum</i>	(Loew, 1861)
		<i>Lamproclasiopa</i>	<i>aracataca</i>	Cresson, 1940
			<i>nana</i>	Williston, 1896
		<i>Polytrichophora</i>	<i>barba</i>	Mathis & Zatwarnicki, 2012
	Gastropini	<i>Beckeriella</i>	<i>bispinosa</i>	(Fabricius, 1805)
			<i>clypeata</i>	Lizarralde de Grosso, 1986
			<i>paragigas</i>	Lizarralde de Grosso, 1991
			<i>schildi</i>	Cresson, 1934
		<i>Gastrops</i>	<i>fuscivenosus</i>	Wirth, 1958
			<i>niger</i>	Williston, 1897
	Gymnomyzini	<i>Athyroglossa (Athyroglossa)</i>	<i>atra</i>	Williston, 1896
			<i>fascipennis</i>	(Cresson, 1918)
			<i>nitida</i>	(Williston, 1896)
			<i>similis</i>	(Cresson, 1918)
		<i>Cerometopum</i>	<i>mosilloides</i>	Cresson, 1914
	Hecamedini	<i>Diphuia</i>	<i>anomala</i>	Cresson, 1944
	Ochtherini	<i>Ochthera (Ochthera)</i>	<i>angustifacies</i>	(Hendel, 1930)
			<i>regalis</i>	Williston, 1897
Ilytheinae	Hyadinini	<i>Nostima</i>	<i>abbreviata</i>	Cresson, 1941
			<i>franciscana</i>	Edmiston & Mathis, 2005
			<i>gilvipes</i>	(Coquillett, 1900)
			<i>ilytheoides</i>	Cresson, 1941
			<i>niveivenosa</i>	Cresson, 1930
			<i>pulchra</i>	(Williston, 1896)
			<i>slossonae</i>	Coquillett, 1900
	Ilytheini	<i>Zeros</i>	<i>flavipes</i>	(Williston, 1896)
Ephydrinae	Dagini	<i>Diedrops</i>	<i>roldanorum</i>	Mathis & Hogue, 1986
		<i>Physemops</i>	<i>fairchildi</i>	Wirth, 1970

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TABLE 1. (Continued)

Subfamily	Tribe	Genus	Species	Author
	Parydrini	<i>Parydra</i> (<i>Chaetoapnaea</i>)	<i>wheeleri</i>	Wirth, 1970
	Scatellini	<i>Limnellia</i>	<i>nigripes</i>	(Cresson, 1918)
			<i>huachuca</i>	Mathis, 1978

References

- Acloque, A. (1897) *Faune de France*. Baillière et Fils, Paris, 516 pp.
- Aldrich, J.M. (1905) A catalogue of North American Diptera (or two-winged flies). *Smithsonian Institution, Smithsonian Miscellaneous Collections*, 46 (1444), 1–680.
- Ale-Rocha, R. & Mathis, W.N. (2015) A revision of the New World species of *Paralimna* Loew (Diptera: Ephydriidae). *Smithsonian Contributions to Zoology*, 643, 1–148.
- Andersson, H. (1971) The European species of *Limnellia* (Dipt., Ephydriidae). *Entomologica Scandinavica*, 2 (1), 53–59.
<http://dx.doi.org/10.1163/187631271X00059>
- Arnaud, P.H. Jr. (1958) *Cressonomyia* new name for *Plagiopsis* Cresson Preoccupied (Diptera: Ephydriidae). *Entomological News*, 69 (1), 24.
- Becker, Th. (1896) Dipterologische Studien IV. Ephydriidae. *Berliner Entomologische Zeitschrift*, 41 (2), 91–276.
- Becker, Th. (1919) Diptères. Brachycères. In: (Ministère de l'Instruction Publique) *Mission du Service Géographique de l'Armée pour la mesure d'un arc de Méridien équatorial en Amérique du Sud sous le contrôle scientifique de l'Académie des Sciences 1899–1906. Vol. 10. Entomologie. ÅBotanique, fascicle 2*. Gauthier-Villars, Imprimeur Libraire du Bureau des Longitudes, de l'Ecole Polytechnique, Paris, pp. 163–215.
- Becker, Th. (1922) Wissenschaftliche Ergebnisse der mit Unterstützung der Akademie der Wissenschaften in Wien aus der Erbschaft Treitl von F. Werner unternommenen zoologischen Expedition nach dem anglo-Ägyptischen Sudan (Kordofan) 1914. VI. Diptera. *Denkschriften der Akademie der Wissenschaften in Wien Mathematisch-Naturwissenschaftliche Klasse*, 98 (1923), 57–82.
- Bezzi, M. (1895) Eine neue Art der Dipterengattung *Psilopa* Fall. *Wiener Entomologische Zeitung*, 14 (4), 137–139.
- Bigot, J.M.F. (1853) Note pour servir de complément et de correction. A l'Essai d'une classification générale et synoptique de l'ordre des Diptères. *Annales de la Société Entomologique de France*, 1, 295–317.
- Bokerman, W.C.A. (1957) Frog eggs parasited by dipterous Larvae. *Herpetologica*, 13, 231–232.
- Bock, I.R. (1990) The Australian species of *Hydrellia* Robineau-Desvoidy (Diptera: Ephydriidae). *Invertebrate Taxonomy*, 3 (7), 965–993.
- Clausen, P.J. & Cook, E.F. (1971) A revision of the Nearctic species of the Tribe Parydrini (Diptera: Ephydriidae). *Memoirs of the American Entomological Society*, 27, 1–50.
- Clausen, P.J. (1977) A revision of the Nearctic, Neotropical, and Palearctic species of the genus *Ochthera* including one Ethiopian species, and one new species from India. *Transactions of the American Entomological Society*, 103, 451–30.
- Clausen, P.J. (1980) Modifications to the genus *Ochthera* (Diptera: Ephydriidae) and additions to the Neotropical species. *Transactions of the American Entomological Society*, 106 (2), 205–222.
- Clausen, P.J. (1985) A revision of the Neotropical species of the genus *Parydra* (Diptera: Ephydriidae). *Transactions of the American Entomological Society*, 111 (3), 361–384.
- Cogan, B.H. (1980) Family Ephydriidae. In: Crosskey, R.W. (Ed.), *Catalogue of the Diptera of the Afrotropical Region*. British Museum (Natural History), London, pp. 655–669.
- Cogan, B.H. & Wirth, W.W. (1977) Family Ephydriidae. In: Delfinado, M.D. & Hardy, D.E. (Eds.), *A catalogue of the Diptera of the Oriental Region. Vol. III. Suborder Cyclorrhapha (excluding Division Aschiza)*. University Press of Hawaii, Honolulu, pp. 321–339.
- Collin, J.E. (1930) Some new species of the dipterous genus *Scatella* Dsv. and the differentiation of *Stictoscatella* gen. nov. (Ephydriidae). *The Entomologist's Monthly Magazine*, 66, 133–39.
- Collin, J.E. (1942) On the generic characters of *Psilopa* Fln. and the correct identity of *Discocerina pulicaria* Hal. (Dipt., Ephydriidae). *The Entomologist's Monthly Magazine*, 78, 148–50.
- Collin, J.E. (1966) A contribution towards the knowledge of the male genitalia of species of *Hydrellia* (Diptera, Ephydriidae). *Bollettino del Museo civico di Storia naturale di Venezia*, 16, 7–8.
- Coquillett, D.W. (1900a) New genera and species of Ephydriidae. *The Canadian Entomologist*, 32 (2), 33–36.
- Coquillett, D.W. (1900b) Report on a collection of dipterous insects from Puerto Rico. *Proceedings of the United States National Museum*, 22, 249–270.
- Coquillett, D.W. (1904) New Diptera from Central America. *Proceedings of the Entomological Society of Washington*, 6 (2), 90–98.
- Coquillett, D.W. (1910) The type-species of the North American genera of Diptera. *Proceedings of the United States National*

- Cresson, E.T. Jr. (1914) Descriptions of new genera and species of the dipterous Family Ephydriidae. –I. *Entomological News*, 25 (6), 241–250.
- Cresson, E.T. Jr. (1916) Studies in the American Ephydriidae (Diptera). I. Revision of the species of the genus *Paralimna*. *Transactions of the American Entomological Society*, 42, 101–124.
- Cresson, E.T. Jr. (1917a) Studies in the American Ephydriidae (Diptera). II. A revision of the species of the genera *Notiphila* and *Dichaeta*. *Transactions of the American Entomological Society*, 43, 27–66.
- Cresson, E.T. Jr. (1917b) Descriptions of new genera and species of the dipterous family Ephydriidae. IV. *Entomological News*, 28 (8), 340–341.
- Cresson, E.T. Jr. (1918) Costa Rican Diptera collected by Philip P. Calvert, Ph.D., 1909–1910. Paper 3. A report on the Ephydriidae. *Transactions of the American Entomological Society*, 44, 39–68.
- Cresson, E.T. Jr. (1922a) Studies in American Ephydriidae (Diptera). III. A revision of the species of *Gymnopa* and allied genera constituting the subfamily Gymnopinae. *Transactions of the American Entomological Society*, 47, 325–343.
- Cresson, E.T. Jr. (1922b) Descriptions of new genera and species of the dipterous family Ephydriidae. –V. *Entomological News*, 33 (5), 135–137.
- Cresson, E.T. Jr. (1924) Descriptions of new genera and species of the dipterous family Ephydriidae. Paper VI. *Entomological News*, 35 (5), 159–164.
- Cresson, E.T. Jr. (1925) Studies in the dipterous family Ephydriidae, excluding the North and South American faunas. *Transactions of the American Entomological Society*, 51, 227–258.
- Cresson, E.T. Jr. (1929) Studies in the dipterous family Ephydriidae. Paper II. *Transactions of the American Entomological Society*, 55, 165–195.
- Cresson, E.T. Jr. (1930a) Studies in the dipterous family Ephydriidae. Paper III. *Transactions of the American Entomological Society*, 56, 93–131.
- Cresson, E.T. Jr. (1930b) Descriptions of new genera and species of the dipterous family Ephydriidae. Paper VIII. *Entomological News*, 41 (3), 76–81.
- Cresson, E.T. Jr. (1933) Descriptions of new species of the dipterous family Ephydriidae. *Entomological News*, 44 (3), 65–70.
- Cresson, E.T. Jr. (1934) Descriptions of new genera and species of the dipterous family Ephydriidae. –XI. *Transactions of the American Entomological Society*, 60, 199–222.
- Cresson, E.T. Jr. (1935) Descriptions of genera and species of the dipterous family Ephydriidae. *Transactions of the American Entomological Society*, 61, 345–372.
- Cresson, E.T. Jr. (1938) Notes on, and descriptions of, some Neotropical Ephydriidae (Dipt.). *Revista de Entomologia*, 8 (1–2), 24–40.
- Cresson, E.T. Jr. (1939) Description of a new genus and ten new species of Ephydriidae, with a discussion of the species of the genus *Discomyza* (Diptera). *Notulae Naturae. The Academy of Natural Sciences of Philadelphia*, 21, 1–12.
- Cresson, E.T. Jr. (1940) Descriptions of new genera and species of the dipterous family Ephydriidae. Paper XII. *Notulae Naturae. The Academy of Natural Sciences of Philadelphia*, 38, 1–10.
- Cresson, E.T. Jr. (1941a) New genera and species of North American Ephydriidae (Diptera). *Entomological News*, 52 (2), 35–38.
- Cresson, E.T. Jr. (1941b) The species of the Neotropical genus *Nostima* (Diptera: Ephydriidae). *Notulae Naturae. The Academy of Natural Sciences of Philadelphia*, 78, 1–8.
- Cresson, E.T. Jr. (1942) Synopses of North American Ephydriidae (Diptera) I. The subfamily Psilopinae, with descriptions of new species. *Transactions of the American Entomological Society*, 68, 101–128.
- Cresson, E.T. Jr. (1943) The species of the Tribe Ilytheini (Diptera: Ephydriidae: Notiphilinae). *Transactions of the American Entomological Society*, 69, 1–16.
- Cresson, E.T. Jr. (1944) Synopses of North American Ephydriidae (Diptera). Parts IA and II. *Transactions of the American Entomological Society*, 70, 159–180.
- Cresson, E.T. Jr. (1945) A systematic annotated arrangement of the genera and species of the Indo-Australian Ephydriidae (Diptera). I. The subfamily Psilopinae. *Transactions of the American Entomological Society*, 71, 47–75.
- Cresson, E.T. Jr. (1946) A systematic annotated arrangement of the genera and species of the Neotropical Ephydriidae (Diptera) I. The subfamily Psilopinae. *Transactions of the American Entomological Society*, 71, 129–163.
- Cresson, E.T. Jr. (1947a) A systematic annotated arrangement of the genera and species of the Neotropical Ephydriidae (Diptera) II. The subfamily Notiphilinae. *Transactions of the American Entomological Society*, 73, 35–61.
- Cresson, E.T. Jr. (1947b) A systematic annotated arrangement of the genera and species of the Ethiopian Ephydriidae (Diptera). II. The subfamily Notiphilinae. *Transactions of the American Entomological Society*, 73, 105–124.
- Cresson, E.T. Jr. (1948) A systematic annotated arrangement of the genera and species of the Indo-Australian Ephydriidae (Diptera). II. The subfamily Notiphilinae and supplement to Part I on the subfamily Psilopinae. *Transactions of the American Entomological Society*, 74, 1–28.
- Cresson, E.T. Jr. (1949) A systematic annotated arrangement of the genera and species of the North American Ephydriidae (Diptera). IV. The subfamily Napaeinae. *Transactions of the American Entomological Society*, 74, 225–260.
- Dahl, R.G. (1959) Studies on Scandinavian Ephydriidae (Diptera Brachycera). *Opuscula Entomologica Supplementum*, 15, 1–224.

- Deonier, D.L. (1971) A systematic and ecological study of Nearctic *Hydrellia* (Diptera: Ephydriidae). *Smithsonian Contributions to Zoology*, 68, 1–147.
<http://dx.doi.org/10.5479/si.00810282.68>
- Deonier, D.L. (1998) A manual of the common North American species of the aquatic leafmining genus *Hydrellia* (Diptera: Ephydriidae). *Memoirs on Entomology, International*, 12, viii + 354 pp.
- d'Orbigny, C.V.D. (1845) *Dictionnaire universel d'histoire naturelle résumant et complétant tous les faits présentés par les encyclopédies, les anciens dictionnaires scientifiques, les œuvres complètes de Buffon, et les traités spéciaux sur les diverses branches des sciences naturelles; - donnant la description des êtres et des divers phénomènes de la nature l'étymologie et la définition des noms scientifiques, les principales applications des corps organiques et inorganiques à l'agriculture, à la médecine, aux arts industriels, etc.; dirigé par M. Charles d'Orbigny, et enrichi d'un magnifique atlas de 288 planches gravées sur acier. Tome sixième (Livraison 65)*. C. Renard, Paris, 792 pp.
- Duda, O. (1942) Neue oder ungenügend bekannte Zweiflügler der paläarktischen Region aus meiner Sammlung. 2. Fortsetzung. *Deutsche Entomologische Zeitschrift*, 1942 (1–4), 1–39.
- Edmiston, J.F. & Mathis, W.N. (2005) A revision of the New World species of the shore-fly genus *Nostima* Coquillett (Diptera: Ephydriidae). *Smithsonian Contributions to Zoology*, 623, i–vi + 1–108.
<http://dx.doi.org/10.5479/si.00810282.623>
- Edmiston, J.F. & Mathis, W.N. (2007) New Zealand species of the shore-fly genus *Nostima* Coquillett (Diptera: Ephydriidae). *Zootaxa*, 1661, 1–16.
- Fabricius, J.C. (1794) *Entomologia systematica emendata et aucta. Secundum classes, ordines, genera, species, adjectis, synonymis, locis, observationibus, descriptionibus. Vol. 4*. C.G. Proft, Fil et Soc., Hafniae (= Copenhagen), 472 pp.
- Fabricius, J.C. (1805) *Systema antiatorum secundum ordines, genera, species, adiectis synonymis, locis, observationibus, descriptionibus*. Reichard, Brunsvigae (= Brunswick), 372 pp.
- Fallén, C.F. (1810) *Specimen entomologicum novam Diptera disponendi methodum exhibens*. Berlingianis, Lundae (= Lund), 26 pp.
- Fallén, C.F. (1813) Beskrifning öfver några i Sverige funna Vattenflugor (Hydromyzides). *Kongliga Vetenskaps-Academiens Handlingar*, Series 3, 1813, 240–257.
- Fallén, C.F. (1823) *Hydromyzides Sveciae*. Berlingianis, Lundae (= Lund), 12 pp.
- Foote, B.A. (1995) Biology of shore flies. *Annual Review of Entomology*, 40, 417–442.
<http://dx.doi.org/10.1146/annurev.en.40.010195.002221>
- Girschner, E. (1889) Eine neue Art der Dipterengattung *Psilopa* Fall. *Entomologische Nachrichten*, 15 (23), 373–374.
- Grossbeck, J.A. (1912) Article XXX. Types of insects, except Lepidoptera and Formicidae, in the American Museum of Natural History additional to those previously listed. *Bulletin of the American Museum of Natural History*, 31, 353–379.
- Haliday, A.H. (1839) Remarks on the generic distribution of the British Hydromyzidae (Diptera). *Annals of Natural History*, 3, 217–224, 401–411.
<http://dx.doi.org/10.1080/03745483909443252>
- Haliday, A.H. (1855) Recent works on the Diptera of northern Europe. *Natural History Review*, 2, 49–61.
- Hendel, F. (1914a) Acalyptrate Musciden (Dipt.) III. In: *H. Sauter's Formosa-Ausbeute. Supplementa Entomologica*, 3, pp. 90–117.
- Hendel, F. (1914b) Neue amerikanische Dipteren. 2. Beitrag. *Deutsche Entomologische Zeitschrift*, 1914, 151–176.
- Hendel, F. (1917) Beiträge zur Kenntnis der acalypraten Musciden. *Deutsche Entomologische Zeitschrift*, 1917 (6), 33–47.
- Hendel, F. (1930) Die Ausbeute der deutschen Chaco-Expedition 1925/26. Diptera. XIX. Ephydriidae. *Konowia*, 9 (2), 127–155.
- Hendel, F. (1931) Neue aegyptische Dipteren aus der Gruppe der acalypraten Musciden, gesammelt von Prof. Efflatoun Bey. *Bulletin de la Société Royale Entomologique d'Égypte*, 15 (2), 59–73.
- Hendel, F. (1933) Ueber einige Typen Wiedemann's und Schiner's von acalypraten Musciden aus Südamerika, nebst einigen verwandten Arten (Dipt.). *Revista de Entomología*, 3 (1), 58–83.
- Hendel, F. (1936) Ergebnisse einer zoologischen Sammelreise nach Brasilien, insbesondere in das Amazonasgebiet, ausgeführt von Dr. H. Zerny. X Teil. Diptera: Muscidae Acalyptratae (excl. Chloropidae). *Annalen des Naturhistorischen Museums in Wien*, 47, 61–106.
- Hollmann-Schirrmacher, V. (1998) Phylogeny of the subfamily Ilytheinae (Diptera, Ephydriidae) with special reference to the genus *Philygria*. *Studia Dipterologica*, 5 (Supplement), 1–144.
- Hutton, F.W. (1901) Synopsis of the Diptera Brachycera of New Zealand. *Transactions of the New Zealand Institute*, 1900 (1), Zoology, 33, 1–95.
- Jones, B.J. (1906) Catalogue of the Ephydriidae, with bibliography and description of new species. *University of California Publications in Entomology*, 1 (2), 153–198.
- Korytkowski, C.A. (1982) La mosca minadora del arroz en el Perú, *Hydrellia wirthi* nueva especie. (Diptera: Ephydriidae). *Revista Peruana del Entomología*, 25 (1), 1–4.
- Krivosheina, M.G. (1989) Obzor muchberegovushek roda *Parydra* Steph. (sic) (Diptera, Ephydriidae) fauny SSSR (A review of the ephydrid flies of the genus *Parydra* Steph. (sic) (Diptera, Ephydriidae) of the Fauna of the USSR). *Entomologicheskoe Obozrenie*, 68 (1), 209–220.
- Krivosheina, M.G. (2012) Review of the shore-fly genus *Limnellia* Malloch, 1925 (Diptera, Ephydriidae) of Russia. *Far Eastern*

- Entomologist*, 246, 1–7.
- Lange, W.H. Jr., Ingebretsen, K.H. & Davis, L.L. (1953) Rice Leaf Miner - Severe Attack Controlled by Water Management, Insecticide Application. *California Agriculture*, 7 (8), 8–9.
- Latrelle, P.A. (1802) Histoire naturelle, générale et particulière des Crustacés et des Insectes. Tome troisième. In: Sonnini, C.S. (Ed.), *Histoire naturelle par Buffon*. F. Dufart, Paris, pp. 1–468.
- Latrelle, P.A. (1810) *Considérations générales sur l'ordre naturel des animaux composant les classes des crustacés, des arachnides, et des insectes; avec un tableau méthodique de leurs genres, disposés en familles*. F. Schoell, Paris, 444 pp.
- Latrelle, P.A. (1829) Les Crustacés, les Arachnides et les Insectes. Vol. 2. In: G. C. L. D. Cuvier (Ed), *Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée*. Vol. 5. 5th Edition. Déterville et Crochard, Paris. pp. 1–556.
- Lilljeborg, W. (1861) En flugas härfningar å kornfälten i östra Skåne, Blekinge och södra delarna af Kalmar Län under sommaren 1860. *Tidskrift för landtmanna och Kommunalekonomien*, 21 (1–4), 205–215.
- Lizarralde de Grosso, M.S. (1982) Redescripción del género *Helaeomyia* Cresson y reivindicación de *Mimapsilopa* Cresson (Diptera, Ephydriidae). *Physis* (Buenos Aires), 40 (99), 121–128.
- Lizarralde de Grosso, M.S. (1984) Aportes al conocimiento del género *Gastrops* Williston (Diptera - Ephydriidae). *Physis* (Buenos Aires), 42 (103), 69–75.
- Lizarralde de Grosso, M.S. (1986) Dos nuevas especies de *Beckeriella* Williston (Diptera Ephydriidae). *Acta Zoologica Lilloana*, 38 (2), 133–137.
- Lizarralde de Grosso, M.S. (1989) Ephydriidae de la República Argentina (Insecta - Diptera). Serie Monográfica y Didáctica No. 3. Facultad de Ciencias Naturales y Instituto Miguel Lillo Universidad Nacional de Tucumán, 1989, 1–93.
- Lizarralde de Grosso, M.S. (1990) Aportes al conocimiento del género *Beckeriella* Williston, I. Descripción de *B. longiventris* sp. nov. y redescrición de *B. bispinosa* (Diptera-Ephydriidae). *Revista de la Sociedad de Entomológica Argentina*, 48 (1–4), [1990 (89)], 143–147.
- Lizarralde de Grosso, M.S. (1991) Aportes al conocimiento del género *Beckeriella* Williston. II. Descripción de *B. paragigas* sp. nov. y redescrición de *B. schildi*. (Diptera-Ephydriidae). *Acta Zoologica Lilloana*, 40 (1), 39–42.
- Lizarralde de Grosso, M.S. (1998) Revisión del género *Beckeriella* Williston (Diptera, Ephydriidae). *Acta Zoologica Lilloana*, 44 (1), 41–56.
- Loew, H. (1860) Neue Beiträge zur Kenntnis der Dipteren. Siebenter Beitrag. Die Europäischen Ephydrinidae und die bisher in Schlesien beobachteten Arten derselben. *Programm der Königlichen Realschule zu Meseritz*, 1860, 1–46.
- Loew, H. (1861) Diptera Americae septentrionalis indigena. Centuria prima. *Berliner Entomologische Zeitschrift*, 5, 307–359.
- Loew, H. (1862) Monographs of the Diptera of North America. Part 1. *Smithsonian Institution, Smithsonian Miscellaneous Collections*, 6 (141), 1–221.
<http://dx.doi.org/10.5962/bhl.title.57906>
- Loew, H. (1872) Diptera Americae septentrionalis indigena. Centuria decima. *Berliner Entomologische Zeitschrift*, 16, 49–115.
<http://dx.doi.org/10.1002/mmnd.18720160110>
- Loew, H. (1878) Neue nordamerikanische Ephydrinen. *Zeitschrift für die Gesammten Naturwissenschaften*, 51, 192–203.
- Macquart, M.J. (1835) Diptères. In: Histoire Naturelle des Insectes. In: Roret, N.E. (Ed.), *Collection des suites à Buffon, Formant avec les œuvres de cet auteur un cours complet d'histoire naturelle*. Tome deuxième. Vol. 2. Pourrat Frères, Paris, pp. 1–703.
- Malloch, J.R. (1925) Notes on Australian Diptera. No. vii. *Proceedings of the Linnean Society of New South Wales*, 50 (4), 311–340.
- Malloch, J.R. (1941) Venezuelan Diptera. I. *Boletín de la Sociedad Venezolana de Ciencias Naturales*, 7 (48), 123–131.
- Mathis, W.N. (1978) A revision of the Nearctic species of *Limnellia* Malloch (Diptera: Ephydriidae). *Proceedings of the Biological Society of Washington*, 91 (1), 250–293.
- Mathis, W.N. (1982) Studies of Ephydrinae (Diptera: Ephydriidae), VI: Review of the tribe Dagini. *Smithsonian Contributions to Zoology*, 345, 30 + iv pp.
- Mathis, W.N. (1990) A revision of the shore-fly genus *Diphobia* Cresson (Diptera: Ephydriidae). *Proceedings of the Entomological Society of Washington*, 92 (4), 746–756.
- Mathis, W.N. (1991) Studies of Gymnomyzinae (Diptera: Ephydriidae), II: A revision of the shore-fly subgenus *Pseudohecamede* Hendel of the genus *Allotrichoma* Becker. *Smithsonian Contributions to Zoology*, 522, 1–28 + i–iii.
- Mathis, W.N. (1994) A revision of the genus *Clasiopella* Hendel (Diptera: Ephydriidae). *Proceedings of the Entomological Society of Washington*, 96 (3), 454–465.
- Mathis, W.N. (1997a) A review of the shore-fly genus *Diphobia* Cresson (Diptera: Ephydriidae). *Proceedings of the Entomological Society of Washington*, 99, 28–36.
- Mathis, W.N. (1997b) Shore flies of the Belizean Cays (Diptera: Ephydriidae). *Smithsonian Contributions to Zoology*, 592, i–vi + 1–77.
- Mathis, W.N. (2010) Ephydriidae (Shore flies). In: Brown, B.V., Borkent, A., Cumming, J.M., Wood, D.M., Woodley, N.E. & Zumbado, M.A. (Eds.), *Manual of Central American Diptera*. Vol. 2. NRC Research Press, Ottawa, Ontario, pp. 1211–1234.
- Mathis, W.N. & Hogue, C.L. (1986) Description of a new species of the shore fly genus *Diedrops* (Diptera: Ephydriidae) from Colombia. *Contributions in Science, Natural History Museum of Los Angeles County*, 377, 21–26.

- Mathis, W.N. & Edmiston, J.F. (1991) S. W. Williston's species of Ephydriidae (Diptera) from St. Vincent (West Indies). *Proceedings of the Biological Society of Washington*, 104 (4), 816–839.
- Mathis, W.N. & Zuyin, J. (1989) A review of the shore-fly genus *Polytrichophora* Cresson from Asia (Diptera: Ephydriidae). *Proceedings of the Biological Society of Washington*, 102 (2), 434–446.
- Mathis, W.N. & Marinoni, L. (2010) A review of *Diphuiia* (Diptera: Ephydriidae) with description of two new species from southern Brazil. *Zoologica. An International Journal of Zoology*, 27 (5), 803–812.
<http://dx.doi.org/10.1590/s1984-46702010000500017>
- Mathis, W.N. & Marinoni, L. (2011) A review of *Parydra* Stenhammar (Diptera: Ephydriidae) from Brazil. *Zoologica. An International Journal of Zoology*, 28 (4), 505–512.
- Mathis, W.N. & Zatwarnicki, T. (1990) A revision of the Western Palearctic species of *Athyroglossa* (Diptera: Ephydriidae). *Transactions of the American Entomological Society*, 116 (1), 103–133.
- Mathis, W.N. & Zatwarnicki, T. (1995) A world catalog of the shore flies (Diptera: Ephydriidae). *Memoirs on Entomology, International*, 4, i–vi + 1–423.
- Mathis, W.N. & Zatwarnicki, T. (1998) A review of the West Indian species of *Mimapsilopa* Cresson (Diptera: Ephydriidae). *Proceedings of the Entomological Society of Washington*, 100, 7–24.
- Mathis, W.N. & Zatwarnicki, T. (2002) A phylogenetic study of the tribe Dryxini Zatwarnicki (Diptera: Ephydriidae). *Smithsonian Contributions to Zoology*, 617, 1–101 + i–vi.
- Mathis, W.N. & Zatwarnicki, T. (2003) Shore flies of the Republic of Seychelles (Diptera: Ephydriidae). *Annales Zoologici*, 53 (4), 585–650.
- Mathis, W.N. & Zatwarnicki, T. (2004) A revision of the shore-fly genus *Cressonomyia* Arnaud (Diptera: Ephydriidae), with comments on species that have been excluded. *Proceedings of the Entomological Society of Washington*, 106 (2), 249–279.
- Mathis, W.N. & Zatwarnicki, T. (2006) A review of the New World species of the shore-fly genus *Leptopsilopa* Cresson (Diptera: Ephydriidae). *Annales Zoologici (Warsaw)*, 56 (1), 85–138.
- Mathis, W.N. & Zatwarnicki, T. (2010) New species and other taxonomic modifications for shore flies from the Delmarva States (Diptera: Ephydriidae). *Proceedings of the Entomological Society of Washington*, 112, 97–128.
<http://dx.doi.org/10.4289/0013-8797-112.1.97>
- Mathis, W.N. & Zatwarnicki, T. (2012) A revision of the New World species of *Polytrichophora* Cresson and *Facitrichophora*, new genus (Diptera: Ephydriidae). *ZooKeys*, 231, 1–116.
<http://dx.doi.org/10.3897/zookeys.231.3687>
- Mathis, W.N. & Zatwarnicki, T. (2013) A revision of the shore-fly genus *Hydrochasma* Hendel (Diptera: Ephydriidae). *ZooKeys*, 363, 1–161.
<http://dx.doi.org/10.3897/zookeys.363.6482>
- Mathis, W.N. & Wirth, W.W. (1976) A new Neotropical shore fly genus with two new species (Diptera: Ephydriidae). *Pan-Pacific Entomologist*, 52 (2), 126–132.
- Mathis, W.N., Castro, B.A., Way, M.O. & Zatwarnicki, T. (2006) Discovery of the South American Rice Miner (Diptera: Ephydriidae) in southeastern United States. *Annals of the Entomological Society of America*, 99 (6), 999–1005.
[http://dx.doi.org/10.1603/0013-8746\(2006\)99\[999:DOTSAR\]2.0.CO;2](http://dx.doi.org/10.1603/0013-8746(2006)99[999:DOTSAR]2.0.CO;2)
- Meigen, J.W. (1803) Versuch einer neuen Gattungs Eintheilung der europäischen zeiflügeligen Insecten. *Magazin für Insektenkunde* (Illiger), 2, 259–281.
- Meigen, J.W. (1830) *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*. Schulz-Wundermann, Hamm, 6, 401 + xi pp.
- Menin, M. & Giaretta, A.A. (2003) Predation on foam nests of Leptodactyline frogs (Anura: Leptodactylidae) by larvae of *Beckeriella niger* (Diptera: Ephydriidae). *Journal of Zoology, London*, 261, 239–243.
<http://dx.doi.org/10.1017/S0952836903004138>
- Mercier, L. (1927) *Discocerinella omonvillea* genre nouveau, espèce nouvelle d'Ephydriidae (Dipt.) de la région paléarctique. *Bulletin and Annales de la Société Entomologique de Belgique*, 67 (3–4), 123–125.
- Osten-Sacken, C.R. (1878) Catalogue of the described Diptera of North America. *Smithsonian Institution, Smithsonian Miscellaneous Collections*, 16 (2 [= publication 270]): i–xlviii + 1–276.
- Pantoja, A., Salazar, A., Meija, O.I., Velazquez, J.G. & Duque, M.C. (1993) Cultural practices to manage the rice leafminer. *Hydrellia wirthi* Korytkowski (Diptera: Ephydriidae), in Colombia. *Journal of Economic Entomology*, 86, 1820–1823.
<http://dx.doi.org/10.1093/jee/86.6.1820>
- Pantoja, A. & Salazar, A. (1993) Ovopositional preference of the rice leafminer, *Hydrellia wirthi* Korytkowski (Diptera: Ephydriidae), on selected rice varieties. *Tropical Agriculture*, 70, 378–379.
- Raffone, G. (2013) On some *Ochthera* Latreille, 1802 from Jamaica with description of a new species and key to species from the Neotropical Region (Insecta, Diptera, Ephydriidae). *Societa Veneziana di Scienze Naturali Lavori*, 38, 5–8.
- Robineau-Desvoidy, J.B. (1830) Essai sur les Myodaires. *Mémoires Présentés par divers Savans à l'Académie Royale des Sciences de l'Institut de France, et Imprimés par son Ordre Sciences Mathématiques et Physiques*, 2 (2), 1–813.
- Rodrigues Júnior, F. de Assis, Mathis, W.N. & Souto-Couri, M. (2014) *Hydrellia Robineau-Desvoidy* (Diptera: Ephydriidae) from Brazil with an emphasis on the faunas from the states of Paraná and Rio de Janeiro. *Zootaxa*, 3753 (6), 501–541.
- Rondani, C. (1856) *Dipterologiae italicae prodromus. genera Italica ordinis dipterorum ordinatim disposita et distincta et in familias et stirpes aggregata. Vol. I.* A. Stoschi, Parmae (= Parma), 228 pp.

- Rondani, C. (1861) *Dipterologiae italicae prodromus. species Italicae ordinis dipterorum in genera characteribus definita, ordinatim collectae, methodo analatica distinctae, et novis vel minus cognitis descriptis. Pars tertia: Muscidae, Tachininarum complementum Parmae. Vol. 4.* A. Stocche, Parmae (= Parma), 174 pp.
- Salazar, A., Pantoja, A. & Duque, M.C. (1993) Aspectos biológicos del minador de la hoja del arroz en el Valle del Cauca. *Arroz (Colombia)*, 42, 38–40.
- Savaris, M., Marinoni, L. & Mathis, W.N. (2016) A revision of the shore-fly genus *Peltopsilopa* Hendel (Diptera: Ephydriidae). *Zootaxa*, 4083 (1), 83–98.
- Schiner, I.R. (1862) Vorläufiger Commentar zum dipterologischen Theile der “Fauna austriaca”. *Verzeichniss Wiener Entomologische Monatschrift*, 6 (12), 428–436.
- Scheiring, J.F. & Connell, T.D. (1979) A description of the egg of *Zeros flavipes* (Cresson) (Diptera: Ephydriidae). *Journal of the Kansas Entomological Society*, 52 (3), 609–612.
- Schiner, I.R. (1868) Diptera. (Article 1). In: Wüllerstorf-Urbair, B. von (Ed.), *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorf-Urbair. Zoologischer Theil. Vol. 2 (1B)*. Karl Gerold's Sohn, Wien, pp. 1–388.
- Stenhammar, C. (1844) Försök till Gruppering och Revision af de Svenska Ephydrinae. *Kongliga Vetenskaps-Akademiens Handlingar*, Series 3, 1843, 75–272.
- Thaxter, R. (1917) New Laboulbeniales, chiefly Dipterophilous American species. *Proceedings of the American Academy of Arts and Sciences*, 52 (10), 647–721.
<http://dx.doi.org/10.2307/20025703>
- Thaxter, R. (1931) Contribution toward a monograph of the Laboulbeniaceae. Part V. *Memoirs of the American Academy of Arts and Sciences*, 16, 1–435.
<http://dx.doi.org/10.2307/25058136>
- Thomson, C.G. (1869) Diptera. species nova descriptsit. In: *Kongliga Svenska Vetenskaps-Akademien. Kongliga svenska fregaten Eugenies resa omkring jorden (q. v.). Pt. 2: Zoologie, (Sec.) 1: Insector*. P.A. Norstedt and Söner, Stockholm, pp. 443–614.
- Tonnoir, A.L. & Malloch, J.R. (1926) New Zealand Muscidae Acalyptratae. Part I. ÄEphydriidae. *Records of the Canterbury Museum*, 3 (1), 1–18.
- Townsend, C.H.T. (1911) Announcement of further results secured in the study of muscoid flies. *Annals of the Entomological Society of America*, 4, 127–152.
<http://dx.doi.org/10.1093/ae/4.2.127>
- Westwood, J.O. (1840) Order XIII. Diptera Aristotle (Antilata Fabricius. Halteriptera Clairv.). In: *An Introduction to the Modern Classification of Insects; Founded on the Natural Habits and Corresponding Organisation of the Different Families. Synopsis of the genera of British Insects*. Orme, Brown, Green and Longmans, London, pp. 125–154.
- Wiedemann, C.R.W. (1830) *Aussereuropäische zweiflügelige Insecten*. Vol. 2. Schulz, Hamm, 648 + xii pp.
- Williston, S.W. (1896) On the Diptera of St. Vincent (West Indies). *The Transactions of the Entomological Society of London*, 1896, 253–446.
<http://dx.doi.org/10.1111/j.1365-2311.1896.tb00965.x>
- Williston, S.W. (1897) Diptera Brasiliana. Part IV. *Kansas University Quarterly*, Series A, 6, 1–12.
- Wirth, W.W. (1958) A review of the genus *Gastrops* Williston with Description of Two new species (Diptera, Ephydriidae). *Proceedings of the Entomological Society of Washington*, 60 (6), 247–250.
- Wirth, W.W. (1965) Ephydriidae. In: Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. & Coulson, J.R. (Eds.), *A Catalog of the Diptera of America North of Mexico*. U.S. Department of Agriculture, Washington, D.C., pp. 734–759.
- Wirth, W.W. (1968). Family Ephydriidae. In: Papavero, N. (Ed.), *A Catalogue of the Diptera of the Americas South of the United States*. Departamento de Zoología, Secretaria da Agricultura. São Paulo, 43 pp.
- Wirth, W.W. (1970a) A new *Athyroglossa* with a key to North American species (Diptera: Ephydriidae). *Journal of the Kansas Entomological Society*, 43 (3), 315–319.
- Wirth, W.W. (1970b) A revision of the Neotropical genus *Physemops* Cresson (Diptera: Ephydriidae). *Pan-Pacific Entomologist*, 46 (3), 170–177.
- Wirth, W.W. & Stone, A. (1956) Aquatic Diptera. In: Usinger, R.L. (Ed.), *Aquatic Insects of California*. University of California Press, Berkeley, pp. 372–482.
- Zatwarnicki, T. (1988) Materials to the knowledge of the genus *Hydrellia* Robineau-Desvoidy (Ephydriidae, Diptera). *Polskie Pismo Entomologiczne*, 58 (3), 587–634.
- Zatwarnicki, T. (1992) A new classification of Ephydriidae based on phylogenetic reconstruction (Diptera: Cyclorrhapha). *Genus*, 3 (2), 65–119.
- Zatwarnicki, T. & Mathis, W.N. (2001) A generic classification of the tribe Discocerinini (Diptera: Ephydriidae). *Annales Zoologici (Warsaw)*, 51 (1), 5–51.
- Zhang, J. & Yang, D. (2006) Review of the species of the genus *Ochthera* from China (Diptera: Ephydriidae). *Zootaxa*, 1206, 1–22.
- Zhang, J. & Yang, D. (2007) Species of the genus *Ilythea* from China (Diptera: Ephydriidae). *Aquatic Insects*, 29, 151–157.
<http://dx.doi.org/10.1080/01650420701351968>
- Zhang, J. & Yang, D. (2009) Species of the genus *Limnellia* from China (Diptera: Ephydriidae). *Zootaxa*, 2308, 58–64.
- Zetterstedt, J.W. (1837) Conspectus Familiarum, Generum et Specierum Dipterorum, in Fauna Insectorum Lapponica descriptorum. *Isis* (Oken's), 1837, 28–67.